

INERTIA WELDED SHAFT AND METHOD THEREFOR

◦

ABSTRACT OF THE DISCLOSURE

A method is provided for assembling a shaft having a metal matrix composite mid shaft and monolithic high strength alloy forward and aft shafts. The forward and aft shafts are each inertia friction welded to separate annular transition pieces which include a barrier layer operative to prevent the formation of intermetallic compounds. Special tooling is used to avoid applying shear stresses to the transition piece during welding. The welded forward and aft subassemblies are subsequently heat treated before inertia friction welding them to the mid shaft.

◦